

CLAIMS

WHAT IS CLAIMED IS:

- 5 1. A system for creating signals indicative of a graphical user interface from wide-angle image data corresponding to a monitored area, said system comprising:
- a buffer configured to receive wide-angle image data corresponding to the monitored area; and
- 10 a processor operably coupled to said buffer and configured to transform wide angle image data received by the buffer into panoramic view data corresponding to at least one panoramic view of the monitored area, and into virtual view data corresponding to at least one virtual view of a portion of the at least one panoramic view.
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2. A system according to claim 1, further comprising:
- a user input module configured to provide user command data to said processor; and
- said processor being further configured to determine the virtual
- 20 view data based on the user command data.
3. A system according to claim 2, wherein the processor is further configured to determine reference data corresponding to an area in the panoramic view represented by the virtual view.
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4. A system according to claim 1, further comprising a source of wide-angle image data operably coupled to said buffer.

5. A system according to claim 4, wherein said source includes a fisheye lens.
6. A system according to claim 4, wherein said source of wide-angle
5 image data comprises a video camera.
7. A system according to claim 6, wherein said video camera produces wide-angle image data in NTSC format.
- 10 8. A system according to claim 1, wherein said processor performs operations on the wide-angle image data to correct distortion in the wide-angle image data, such that said panoramic view and said virtual view are corrected images.
- 15 9. A system according to claim 1, further comprising:
a dome camera system operably coupled to the processor, said dome camera system having a dome camera and being configured to aim the dome camera at a portion of the monitored area according to pan, tilt and zoom command data; and
20 wherein the processor is further configured to communicate pan, tilt and zoom command data to cause the dome camera system to aim the dome camera at a portion of the monitored area.
10. A system according to claim 9, wherein the portion of the
25 monitored area at which the dome camera is aimed corresponds to a virtual view.

11. A system according to claim 10, wherein the system transforms wide-angle image data received by the buffer into virtual view data corresponding to at least one virtual view and into panoramic view data corresponding to at least one panoramic view in real time.

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12. A system according to claim 1, further comprising a display device operably coupled to said processor to display the at least one panoramic view and the at least one virtual view.

10 13. A system according to claim 12, where the at least one panoramic view corresponds to a substantially undistorted view of the monitored area, and the at least one virtual view corresponds to a portion of the at least one panoramic view.

15 14. A system according to claim 12, further comprising at least one reference window overlaid on at least one portion of the at least one panoramic view, each overlaid portion corresponding to the portion of the at least one panoramic view to which the at least one virtual view corresponds.

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15. A system according to claim 12, wherein:

the at least one panoramic view includes a first panoramic view and a second panoramic view, the first panoramic view corresponding to a first portion of the monitored area, and the second panoramic view

25 corresponding to the remaining portion of the monitored area, and

the at least one virtual view includes a first virtual view and a second virtual view, the first virtual view corresponding to a first portion

of the first panoramic view, and the second virtual view corresponding to a second portion of the second panoramic view.

16. A method of generating a graphical user interface, said method
5 comprising steps of:
buffering wide-angle data corresponding to a wide-angle image of
a monitored area;
transforming the buffered data into panoramic data for at least one
panoramic view using a panoramic transformation;
10 transforming portions of the buffered data into virtual view data for
at least one virtual view using a virtual view transformation.

17. A method according to claim 16, further comprising steps of:
determining pan, tilt and zoom values;
15 determining the portions of the buffered data to transform into
virtual view data for at least one virtual view based on the pan, tilt and
zoom values.

18. A method according to claim 17, further comprising a step of
20 determining reference data based on the pan, tilt and zoom values.

19. A method according to claim 18, wherein the at least one virtual
view includes a first virtual view and a second virtual view, said
methodology further comprising steps of:
25 communicating pan, tilt and zoom commands to a dome camera
system; and
producing virtual view data for one of the first virtual view or
second virtual view from the dome camera system.

20. A method according to claim 16 further comprising the step of encoding reference data, virtual view data and panoramic view data for output.

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21. A system for creating signals indicative of a graphical user interface from wide-angle image data corresponding to a monitored area, said system comprising:

means for storing wide-angle image data corresponding to a
10 monitored area; and

means for processing and transforming data received from said
storing means into panoramic view data corresponding to at least one
panoramic view of the monitored area and into virtual view data
corresponding to at least one virtual view of a portion of the at least one
15 panoramic view.

22. The system of claim 21, first comprising means for displaying said panoramic and virtual views.